

What is claimed is:

*207* 1 A network communications system for connecting a plurality of computers in a network, the system comprising:

multiport circuitry for interconnecting the plurality of computers in the network;

and

a plurality of network communications cable dispensing devices, each cable dispensing device carrying a network communications cable having a first portion and a second portion, the first portion of the communications cable having an extremity including a first connector adapted to be coupled to one of the ports of the multiport interconnecting circuitry, the second portion of the communications cable being extendible from and retractable into the cable dispensing device and having an extremity including a second connector adapted to be coupled to one of the computers.

2. A system, as defined in claim 1, in which:

the multiport interconnecting circuitry includes a network switching circuit.

3. A system, as defined in claim 1, in which:

the second portion of the communications cable is retractable into the cable dispensing device under spring load.

4. A system, as defined in claim 1, in which:

the communications cable comprises flat, Category 5 compliant LAN cable including two twisted wire pairs; and

the connector at the extremity of each of the first and second portions of the communications cable comprises an RJ-45 modular plug.

5. A system, as defined in claim 1, including:

a combined power/network cable for connecting the multiport interconnecting circuitry to a local area network and to a source of electrical power.

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6. A system, as defined in claim 1, in which:

the multiport interconnecting circuitry includes a connector for coupling the system to a second network communications system in daisy chain fashion.

7. A system, as defined in claim 1, in which:

the cable dispensing devices are removably latched in place in the system.

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A multiport network communications system for connecting a plurality of

*computer systems with a LAN, the system comprising:*

a housing having a base including a side wall and defining a plurality of internal wells, the side wall of the base defining a plurality of client computer ports, each client port communicating with one of the wells;

a plurality of standard, modular LAN jacks mounted in the housing and corresponding in number to the number of recesses, each LAN jack being adapted to receive a standard modular LAN plug;

a cable take-up device removably mounted within each of the wells, each cable take-up device carrying a LAN cable having a first portion and a second portion, the first portion of the LAN cable being fixed relative to the take-up device and having an extremity carrying a standard modular LAN plug adapted to be received by one of the LAN jacks, the second portion of the LAN cable being extendible from the take-up device against a resilient bias and retractable by the take-up device in response to the resilient bias, the second portion of the cable having an

extremity carrying a standard modular LAN plug adapted to be received by a corresponding jack on one of the computer systems; and

multiport interconnection circuitry within said housing, the multiport interconnection circuitry being electrically connected to the LAN jacks in the housing, the multiport interconnection circuitry providing a communications interface between the LAN jacks in the housing and the LAN.

9. A system, as defined in claim 8, in which:

the interconnection circuitry comprises a LAN switch, and the standard modular LAN jacks and plugs are of the RJ-45 type.

10. A system, as defined in claim 8, in which:

the multiport interconnection circuitry further includes a port adapted to be connected to the multiport interconnection circuitry of a cascaded network communications system.

11. A system, as defined in claim 8, further including:

a combined power/LAN cable having a first set of conductors for connecting the multiport interconnection circuitry to a source of electrical power and a second set of conductors for carrying network signals between the system and the LAN.

12. A system, as defined in claim 8, in which:

the housing includes a cover having an outer surface;  
the multiport interconnection circuitry includes light emitters for indicating the status of the computer ports; and

the cover carries light pipes positioned relative to the light emitters so as to transmit light from the light emitters to the outer surface of the cover to provide a visual indication to a user of client port status.

13. A system, as defined in claim 8, in which:

each cable take-up device includes an upper surface carrying a handle facilitating removal of the device from the associated well.

14. A system, as defined in claim 8, in which:

the modular LAN plug at the extremity of the second portion of the communications cable includes a resilient pad for absorbing shock resulting from the sudden release of the second portion of the cable from an extended position.

*174/113R*  
*C. Nguyen* A combined power/Ethernet LAN cable comprising:

a first group of conductors comprising two twisted wire pairs for transmitting Ethernet LAN signals, the first group of conductors having a first end and a second end, the first end being adapted to be connected to an Ethernet LAN;

a second group of conductors extending generally parallel with the first group of conductors and comprising two twisted wire pairs for transmitting electrical power, the second group of conductors having a first end and a second end, the first end of the second group of conductors being adapted to be connected to a source of electrical power;

an RJ-45 modular connector terminating the second ends of the first and second groups of conductors, the RJ-45 connector having at least eight contact positions, the conductors of the first group of conductors being connected to a first group of four of the contact positions

of the RJ-45 connector and the conductors of the second group of conductors being connected to a second group of four of the contact positions of the RJ-45 connector; and

an insulative jacket enclosing the first and second groups of conductors.

16. A cable, as defined in claim 15, including:

a first EMI/RFI shield surrounding enclosing the first group of conductors.

17. A cable as defined in claim 16, including

a second EMI/RFI shield surrounding the first shield, the second group of conductors being disposed between the first and second shields.

18. A cable, as defined in claim 15, in which:

the RJ-45 modular connector has ten contact positions 1-10, the conductors of the first group of conductors being connected to contact positions 1-4 and the conductors of the second group of conductors being connected to contact positions 7-10.

19. A cable, as defined in claim 18, in which:

intermediate contact positions 5 and 6 of the RJ-45 connector are devoid of electrical contacts to provide electrical isolation between the first and second groups of conductors.

20. A cable, as defined in claim 15, including:

a second RJ-45 modular connector terminating the first and second groups of conductors at the first ends thereof, the second RJ-45 connector having at least eight contact positions, the conductors of the first group of conductors being connected to a first group of four

of the contact positions of the second RJ-45 connector and the conductors of the second group of conductors being connected to a second group of four of the contact positions of the second RJ-45 connector.

21. A cable, as defined in claim 20, in which:

the second RJ-45 connector has ten contact positions 1-10, the conductors of the first group of conductors being connected to contact positions 1-4 and the conductors of the second group of conductors being connected to contact positions 7-10.

22. A cable, as defined in claim 21, in which:

intermediate contact positions 5 and 6 of the second RJ-45 connector are devoid of electrical contacts to provide electrical isolation between the first and second groups of conductors.

23. A power/Ethernet LAN adapter assembly comprising:

(a) a combined power/Ethernet cable including:

(i) a first group of Category 5 compliant conductors comprising two twisted wire pairs for transmitting Ethernet LAN signals, the first group of conductors having a first end and a second end, the first end being adapted to be connected to an Ethernet LAN;

(ii) a second group of conductors extending generally parallel with the first group of conductors and comprising two twisted wire pairs for transmitting electrical power, the second group of conductors having a first end and a second end, the first end of the second group of conductors being adapted to be connected to a source of electrical power;

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- (iii) a first RJ-45 modular plug terminating the second ends of the first and second groups of conductors, the first RJ-45 plug having at least eight contact positions, the conductors of the first group of conductors being connected to a first group of four of the contact positions of the RJ-45 plug and the conductors of the second group of conductors being connected to a second group of four of the contact positions of the RJ-45 plug; and
- (iv) an insulative jacket enclosing the first and second groups of conductors.

(b) an electrical power cord;

(c) a Category 5 compliant cable terminated with a second RJ-45 modular plug for connection to a LAN; and

(d) an enclosure attached to the combined power/Ethernet LAN cable, the electrical power cord and the Category 5 compliant cable, the enclosure containing:

- (i) conductors interconnecting the Category 5 compliant cable and the first end of the first group of conductors; and
- (ii) a power supply interconnecting the power cord and the first end of the second group of conductors.

24. An adapter assembly, as defined in claim 23, in which:

the first RJ-45 plug has ten contact positions 1-10, the conductors of the first group of conductors being connected to contact positions 1-4 and the conductors of the second group of conductors being connected to contact positions 7-10.

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25. An adapter assembly as defined in claim 24, in which:  
intermediate contact positions 5 and 6 of the first RJ-45 plug are devoid of electrical contacts to provide electrical isolation between the first and second groups of conductors.

26. A LAN cable dispensing device comprising:  
a casing; and  
a flat, Category 5 compliant LAN cable having a first portion and a second portion, the first portion of the LAN cable being fixed relative to the casing and having an extremity including a first RJ-45 modular plug and the second portion of the LAN cable being extendible from and retractable under spring load into the casing and having an extremity including a second RJ-45 plug.

27. A cable dispensing device, as defined in claim 26, in which:  
the casing includes a surface for receiving the second RJ-45 modular plug when the second portion of the LAN cable is fully retracted; and  
the second RJ-45 modular plug includes a shock absorber for engaging said casing surface.

28. A cable dispensing device, as defined in claim 26, in which:  
the casing includes a top surface; and  
a handle projects from the top surface to facilitate lifting of the dispensing device.